

CLAIMS

We claim:

1. A method for automated testing of a hand actuated pump, the method comprising the steps of:

providing a continuous source of fluid material to be dispensed by the hand actuated pump;

controlling a pump actuation component to actuate the hand actuated pump;

catching material dispensed from the hand actuated pump; and

measuring and recording performance information.

2. The method of claim 1, wherein said method further comprises the step of adjusting the orientation of said pump actuation component.

3. The method of claim 1, wherein said controlling step further comprises the step of adjusting at least one of the following actuation variables: the time between pump actuations, the rate of the actuation, the angle of the actuation, the completeness of the actuation, the interval between pump test cycles, and the number of actuations per pump test cycle.

4. The method of claim 1, wherein said performance information includes at least one of: the amount of material dispensed by the hand actuated pump, the end of life of the pump, the length of life, what caused the end of life of the pump, the resistance of the pump to actuation, and the amount of product drip between test cycles.

5. The method of claim 1, wherein said performance information includes at least one of the following factors as recorded over time: the force of the spray, the spread of the spray, the distance of the spray, the amount dispensed, and the actuation force.

6. The method of claim 4, wherein the amount of material dispensed is measured by one of: the amount of fluid withdrawn from a supply tank, the amount of fluid made up to the supply tank, and the amount of dispensed material in the collection tank.

7. The method of claim 1, further comprising the step of electronically storing said data in at least one of a spreadsheet and a database.

8. The method of claim 1, further comprising the step of alarming on a malfunction of equipment.

9. The method of claim 4, further comprising the step of adjusting said actuation variables including at least one of: the number of pump actuations per unit of time, the angle of the actuation, the interval between pump test cycles, the force of the actuation, the rate of the actuation, and the completeness of the actuation.

10. The method of claim 1, further comprising the step of alarming on occurrence of an event.

11. A method of testing a hand actuated pump, which is configured to receive a liquid from an infinite reservoir, comprising the steps of:

mechanically and repetitively actuating the hand actuated pump; and

measuring and recording performance information related to said actuating of the hand actuated pump.

12. The method of claim 11 further comprising the step of variability actuating the hand activated pump.

13. A pump testing system for testing a hand actuated pump, the pump testing system comprising:

a testing station further comprising at least one pump actuation component that is configured to actuate the hand actuated pump;

a supply tank configured to serve as a fluid source for the hand actuated pump;

a collection tank configured to serve as a collection reservoir for material expelled from the hand actuated pump; and

a controller configured to automatically control said at least one pump actuation component, wherein said controller is configured to repetitively actuate the hand actuated pump.

14. The pump tester of claim 13, wherein said at least one pump activation component comprises one or more devices that are configured to test at least one of: horizontally actuated pumps, vertically actuated pumps, and pumps that are actuated at other angles.

15. The pump tester of claim 13, wherein said at least one pump activation component is configured to actuate both push type pumps and pull type pumps.

16. The pump tester of claim 13, wherein said at least one pump activation component is configured to be variably oriented to change the angle of an actuation force.

17. The pump tester of claim 13, wherein said controller is configured to record performance information related to said actuating of said pump.

18. The pump tester of claim 17, wherein said performance information includes at least one of: the number of actuations, the rate of the pump actuation, the angle of the pump actuation, the completeness of the pump actuation, the interval between pump test cycles, the amount of fluid dispensed by the hand actuated pump, the length of life of the hand actuated pump, what caused the end of life of the pump, and the amount of product drip between pump test cycles.

19. The pump tester of claim 13, wherein said performance information include at least one of the following factors as recorded over time: the force of the spray, the spread of the spray, the distance of the spray, the amount dispensed, and the actuation force.

20. The pump tester of claim 19, wherein the amount of fluid dispensed is measured by one of: the amount withdrawn from the supply tank, the amount made up to said supply tank, the amount in said collection tank, and the weight of either tank.

21. The pump tester of claim 13, wherein said controller is further configured to electronically store said data in at least one of a spreadsheet and a database.

22. The pump tester of claim 13, wherein said controller is further configured to adjust at least one of the following: the number of pump actuations per pump test cycle, the time between pump actuations, the number of pump actuations per unit of time, the angle of the pump actuation, the interval between successive pump test cycles, the force of the actuation, the rate of the actuation, and the completeness of the actuation.

23. The pump tester of claim 13, wherein said at least one actuation component is configured to test at least one of: a plunger type pump, a trigger type pump, or a contact-less type of pump.

24. The pump tester of claim 13, wherein said controller is further configured to alarm on occurrence of an event.

25. A pump tester for testing a hand actuated pump, the pump tester comprising:

at least one pump actuation component configured to actuate the hand actuated pump, wherein said at least one pump actuation component is configured to be automatically controlled by a controller, and wherein said controller is configured to cause said at least one pump

actuation component to repetitively actuate the hand actuated pump to cause the hand actuated pump to draw a fluid from a supply tank and to expel material into a collection tank.

26. The pump tester of claim 25, wherein the hand actuated pump is a wall mounted pump.

27. The pump tester of claim 25, wherein said controller is configured to measure the force exerted by said actuation component upon said hand actuated pump, over multiple actuations, to achieve a set range of movement of said actuation component.